



#5  
12-26-02  
W. Harper

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Gentry et al.

09/280,152

Application No.: 09/248,808

Filed: December 22, 1998

For: SYSTEM, METHOD AND  
COMPUTER PROGRAM  
PRODUCT FOR CONNECTIVITY  
OF WIRELESS BASE STATION  
TO PSTN VIA AN IP DATA  
NETWORK

Docket No.: SN0197

Group No.: 2746

Examiner: K. Harper

RECEIVED

DEC 17 2002

Assistant Commissioner for Patents  
Washington, D.C. 20231

Technology Center 2600

DECLARATION OF PRIOR INVENTION IN THE UNITED STATES TO  
OVERCOME CITED PATENT UNDER 37 CFR § 1.131

This Declaration is to establish completion of the invention in this application in the United States at a date prior to November 23, 1998, which is the effective date of United States Patent number 6,161,008 that was cited by the Examiner. This declaration is being submitted prior to a Final Rejection.

The subject application was assigned to Northern Telecom Limited (now Nortel Networks Limited) as demonstrated by the assignment recorded at reel 9872/frame 0155. The person making this Declaration is Senior Intellectual Property Counsel for the Assignee and is the attorney of record in the subject application, and is authorized to sign on the Assignee's behalf as demonstrated by the Power of Attorney attached as Exhibit A, as the inventors were not available to execute this declaration.

To establish the date of conception of the invention a true copy of the Invention Disclosure Submission that was submitted on-line for consideration by Nortel's patent department is attached as Exhibit B.

From this Document it can be seen that use of the packet (IP) network for connecting cellular users to an end office, for which Lee et al. is being cited, was conceived at least as early as March 20, 1998, which is a date earlier than the effective date of the reference.

### **DILIGENCE**

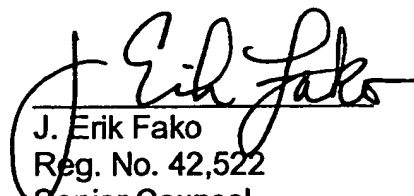
As indicated on the Disclosure, the Invention Disclosure Submission was received by Nortel's patent department on March 20, 1998.

Receipt of the Invention Disclosure Submission was acknowledged on March 24, 1998, as demonstrated by attached Exhibit C, in an acknowledgement memo sent to the inventors.

Outside counsel was engaged to draft the subject patent application on July 2, 1998, as demonstrated by the engagement letter attached as Exhibit D. The engagement of outside counsel was acknowledge on July 8, 1998 as demonstrated by attached Exhibit E. Finally, the subject application was filed December 22, 1998. Thus, the Applicants acted diligently to file a patent application pursuant to MPEP §715.07.

As a person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believe to be true and further that these statements were made with the knowledge that willful false statements and the like so made

are punishable by fine, imprisonment, or both under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



J. Erik Fako  
Reg. No. 42,522  
Senior Counsel  
Nortel Networks



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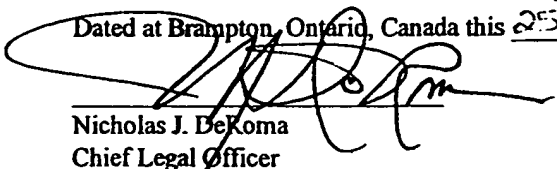
Nicholas J. DeRoma  
Chief Legal Officer

**AUTHORITY FOR PROSECUTION OF PATENT, TRADEMARK AND COPYRIGHT  
APPLICATIONS AND RELATED MATTERS**

Pursuant to a resolution of the Executive Committee of the Board of Directors of Nortel Networks Limited, adopted on February 8, 1984, I hereby designate those individuals providing intellectual property law services for Nortel Networks Limited, identified below, as having the authority to execute, sign and deliver in the name and on behalf of the Corporation, by their sole signature, any and all documents concerning the appointment of patent agents and trademark agents, and any and all documents relating to the obtaining of patents, industrial designs, trademarks and copyrights, coming before any government registry office or other competent authority having jurisdiction with respect to such matters. The individuals include:

Holmes Anderson  
Chris Cianciolo  
John Crane  
Angela De Wilton  
J Erik Fako  
Jean-Pierre Fortin  
Tom Gigliotti  
Jaspreet Harit  
Paul Hashim  
Dennis Haszko  
Eric Jensen  
William Junkin  
Lindsay McGuinness  
Barbara McKenzie-Wardell  
Jeff Measures  
Allan Millard  
Randall Mishler  
Russell Todd Morgan  
Neil Mothew  
Kevin Smith  
John Vynalek  
Richard Weiss  
Stuart Wilkinson  
John Richard Witcher II

Dated at Brampton, Ontario, Canada this 25<sup>th</sup> day of February, 2002.

  
Nicholas J. DeRoma  
Chief Legal Officer

**Exhibit A**

**invention disclosure submission**

Complete all sections and send to the Nortel Patent Dept at:  
OTTAWA, Canada: Patent Dept., 0265, NTPAT  
or HARLOW, UK: Patent Dept., HAL05  
or RICHARDSON, USA: Patent Dept., Mail Stop C-0419, RICH1

No. SN019.  
Rec'd 20 Mar 98  
Attny/Agent

**NORTEL**  
NORTHERN TELECOM

**Invention Title**

BSC with TCP/IP to support Voice over IP to the Serving Switch

Correspondence will be directed to the first-named inventor only.

(1) Full legal name of first inventor (include middle initial) Gentry William David Name usually known as: Bill Global ID 1635302				Residence and post office address if different 103 Carriole Ct Cary, NC 27513 <i>VoIP wireless? Good idea new</i>	
Phone 294-8565	Location BNRTP	Department 3R62	Mailstop	Occupation DMS100-Wireless Architect	Fax 294-8805
Signature			Date	Citizen of USA	

(2) Name of supervisor or divisional head Emery Hanzel Name of AVP Reported to: Abdul Khawar		(5) Project Number 14425
Signature		(6) Indicate your LOB Public Carrier Networks If Advanced Technology, please indicate which group. Please Make a Selection
Date		

**Technical field**

(3) Date of first written description or discussion with others. Internal discussions among the listed inventors first occurred January 15, 1998. Other discussions within Nortel occurred on March 18, 1998.	Key words for searching TCP/IP, VoIP, voice over IP, ATM, base station controller, BSC, gatekeeper, gateway
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(4) Which products will use this invention? DMS100, DMS100-Wireless, DMS-MTX	(7) Is the invention relevant to a Standards activity? no If so give details:  (8) Does this invention arise from any arrangement involving any external organization? no
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**Exhibit B**

**(a) Brief description of the invention**

This disclosure surrounds the creation of a new access configuration for mobile subscribers using a TCP/IP interface. It provides a mechanism for distributing all mobility functions to an off-board node (such as a BSC or a gateway), and provides an IP connection between the off-board node and the serving switch. An IP network is used to connect the off-board node with the serving switch. VoIP (H.323) is used to establish the voice and call control channels.

(Note: Throughout this disclosure, note that it is possible to use ATM instead of IP as the transport between the BSC and the serving switch. All functionality will remain the same in these scenarios.)

**System Description**

The components of the system include:

- \* Enhanced Base Station Controller (new claim). The enhanced BSC would be able to function as an endpoint for signalling to TCP/IP network. It will be capable of transmitting and receiving voice and call control information over IP between the serving switch and the radio equipment. Voice packets which are received from the serving switch (over IP) will be relayed to the base transceiver system (BTS), where the information is transmitted to the mobiles.

If the enhanced BSC is used, then a mobile gatekeeper will still be required in order to handle IS-41 connectivity and IP address mappings. However, it will not have to provide

**(b) What is the problem solved by the invention?**

This invention addresses several problems:

- the ability to provide services to the wireless subscriber from a single switching node, regardless of where the mobile is currently located in the network. The biggest challenge with providing business centrex functionality for a mobile subscriber is addressing how the service can be configured on multiple network nodes as the mobile moves from place to place. This invention provides a mechanism to handle all services from a single switch by providing a voice over IP connection between the mobile's serving BSC and its home switch.
- the ability to perform intersystem handoff without impacting the network switches that are involved in the call. Voice over IP provides a way to re-map call control and voice signalling without using physical trunking through the network.
- the ability to perform multiple intersystem handoffs within a specific call without utilizing additional physical trunking resources between the different switches serving the call. With this invention, only the home switch and the BSC currently serving the mobile are involved in the call.

**(c) What other solutions have been tried and why didn't they work?**

Other approaches involved using a T1 connection between the BSC and the serving switch. This doesn't provide the flexibility to reconfigure voice and call control signalling that is possible with the H.323 protocol using voice over IP.

**(d) What are the specific elements or steps that solved the problem and how do they do it?**

This invention took the technology which is utilized in other voice over IP products which are being developed, and identified how it can be used to provide new approaches for mobile telephone calls.

**(e) What is the commercial value of the invention to Nortel and Nortel's major competitors? (see guidelines)**

Potentially a very high commercial value. This invention provides the mechanism which can be used to connect a wireless subscriber to its home switch such that it enables services which currently aren't available to mobile subscribers. There is value both in the voice over IP infrastructure between the switch and BSC, as well as the services which it enables.

## Additional Inventors

No. SN0197

(1) Full legal name of 2nd inventor (include middle initial) Sam Christie 1111235				Residence address (and post office address if different) 309 Trappers Run Drive Cary, NC 27513	
Phone 294-7244	Location BNRTP	Department 3150	Mailstop	Occupation Sr. Advisor	Fax
Signature		Date		Citizen of USA	

(1) Full legal name of 3rd inventor (include middle initial) David P Ress 1604155				Residence address (and post office address if different) 107 Sedgman Ct. Cary, NC 27511	
Phone 294-7020	Location BNRTP	Department 3M01	Mailstop	Occupation Advisor - IP Telephony	Fax
Signature		Date		Citizen of	

(1) Full legal name of 4th inventor (include middle initial)				Residence address (and post office address if different)	
Phone	Location	Department	Mailstop	Occupation	Fax
Signature		Date		Citizen of	

(1) Full legal name of 5th inventor (include middle initial)				Residence address (and post office address if different)	
Phone	Location	Department	Mailstop	Occupation	Fax
Signature		Date		Citizen of	

(1) Full legal name of 6th inventor (include middle initial)				Residence address (and post office address if different)	
Phone	Location	Department	Mailstop	Occupation	Fax
Signature		Date		Citizen of	

(1) Full legal name of 7th inventor (include middle initial)				Residence address (and post office address if different)	
Phone	Location	Department	Mailstop	Occupation	Fax
Signature		Date		Citizen of	

(1) Full legal name of 8th inventor (include middle initial)				Residence address (and post office address if different)	
Phone	Location	Department	Mailstop	Occupation	Fax
Signature		Date		Citizen of	



[REDACTED]

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**From:** Potvin, Judy [NTPAT:0265:EXCH]  
**Sent:** Tuesday, March 24, 1998 8:49 AM  
**To:** Gentry, Bill [BNRTP:3R62-I:COCOS]  
**Cc:** Hanzel, Emery [BNRTP:3R60-M:COCOS]; Christie, Sam [BNRTP:3I50-I:COCOS]; Ress, David [BNRTP:3M01-I:EXCH]  
**Subject:** Invention Disclosure

INVENTION DISCLOSURE NO.: SN-0197

On behalf of Bill Junkin of Nortel's Patent Department, I acknowledge receipt of the invention disclosure entitled "BSC WITH TCP/IP TO SUPPORT VOICE OVER IP TO THE SERVING SWITCH", which has been allocated to the PCN Line of Business.

A Review Board, established within this LOB to review the commercial prospects of disclosed inventions, will assign priorities for their handling. We will be in touch with you shortly with respect to the evaluation of this disclosure at the Review Board.

We note that, with respect to Question (3) on the Invention Disclosure Submission form, "Date and details of first use or public disclosure (past or future)", you have indicated that this invention has not been disclosed to the public. It is important that we are advised well in advance of any planned disclosure of this invention to anyone outside of the Corporation. In the meantime, we remind you to consider this invention as **proprietary and confidential**.

Sincerely - Judy Potvin  
Patent Co-ordinator

**Exhibit C**

Northern Telecom  
Patent Department  
P.O. Box 13828  
Research Triangle Park, NC 27709-3828

**NORTEL**  
NORTHERN TELECOM

Overnight and oversize packages:  
4400 Emperor Blvd., Mailstop 11A130  
Morrisville, NC 27560

Direct Dial - Voice: 919-992-4463  
Fax: 919-992-6659  
Internet: stevphil@nortel.com

July 2, 1998

Jenkins & Wilson, P.A.  
Rick Jenkins, Esq.  
Suite 1400, University Tower  
3100 Tower Boulevard  
Durham, North Carolina 27707.

**PRIVELEDGED and CONFIDENTIAL**

Ref: Invention Disclosures SN-0197 and SN-0210

Dear Mr. Jenkins:

It is with great pleasure that I engage you as outside counsel for the preparation of U.S. patent applications for Nortel invention disclosures SN-0197 and SN-0210. Please contact the lead inventors, William D. Gentry, (SN-0197) 992-8565 and Jason G. Emery, (SN-02010) 992-7002, directly to work on the applications.

Please have the applications ready for filing and delivered to me at this office within ninety (90) days of the date of this letter. Please include formal drawings, and a diskette containing the specification in Word or Wordperfect 5.x format. We will get papers signed and file the cases and send copies of everything to you. Please copy me on the first reasonably complete drafts you supply to the inventors.

We will pay \$6000.00 per application because of the complexity of these inventions.

Please call if you have any questions or concerns. I look forward to working with you.

Sincerely,



Steven B. Phillips,  
Senior Patent Attorney,  
Registration Number 37,911

Enclosures

SP:dq

**Exhibit D**

JENKINS & WILSON, P.A.  
ATTORNEYS AND COUNSELORS AT LAW  
SUITE 1401 UNIVERSITY TOWER  
3100 TOWER BOULEVARD  
DURHAM, NORTH CAROLINA 27707

RICHARD E. JENKINS  
JEFFREY L. WILSON

TELEPHONE (919) 493-8000  
FACSIMILE (919) 419-0383

PATENT, TRADEMARK  
AND COPYRIGHT  
PRACTICE

JENNIFER L. SKORD

ARLES A. TAYLOR, JR.\* (PATENT AGENT)  
GREGORY A. STEPHENS\*\* (PATENT AGENT)

July 8, 1998

INTERNET (E-MAIL)  
PATENT@INTERPATH.COM

\*ADMITTED ONLY IN TENNESSEE  
\*\*ADMITTED ONLY IN PENNSYLVANIA AND NEW JERSEY

Steven B. Phillips, Esq.  
Senior Patent Attorney  
Northern Telecom  
Patent Department  
Post Office Box 13828  
Research Triangle Park, NC 27709-3828

Re: Preparation of U.S. Patent Application  
for BSC WITH TCP/IP TO SUPPORT  
VOICE OVER IP TO SERVING SWITCH  
Your Ref. SN0197; Our Ref. 98-1273/4

Dear Mr. Phillips:

We would like to acknowledge and thank you for the subject Invention Disclosure which you forwarded with your letter dated July 2, 1998. According to your instructions, we will promptly initiate preparation of a U.S. patent application for filing in the U.S. Patent and Trademark Office within ninety (90) days. Also, we will consult with Mr. Gentry with any questions in an effort to keep costs down.

We look forward to the opportunity of assisting you in this matter. Please do not hesitate to contact us if you have any questions.

With best personal regards, I am

Very truly yours,

JENKINS & WILSON, P.A.



Richard E. Jenkins

REJ/lsg

**Exhibit E**